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Remarks

Reconsideration of claims 1-18 is respectfully requested.

In the Office action dated April 19, 2005, the Examiner rejected claims 1-10 and 13-18 under 35 USC § 103(a), and cited claims 11 and 12 as containing allowable subject matter, but depending from a rejected base claim. The Examiner's various rejections will be discussed below in the order appearing in the Office action.

35 USC § 103(a) Rejection - Claims 1-10, 13-15 and 18

The Examiner first rejected the above-cited claims under 35 USC 103(a) as being unpatentable over US Patent 5,499,134 (Galvanauskas et al.) in view of US Patent 5,880,877 (Fermann et al.). The Examiner cited Galvanauskas et al. as disclosing "an optical pulse amplification" arrangement, using a chirped Bragg grating as a "phase conditioning optical dispersive element" in combination with a fiber amplifier to produce high-power femtosecond optical pulses. The Fermann et al. reference was cited by the Examiner as teaching various particulars regarding the fiber amplifier itself.

In response, applicant asserts that the combination of Galvanauskas et al. and Fermann et al. does not disclose or suggest an arrangement that utilizes an "output section of single mode fiber fused to the output of the rare-earth doped fiber amplifier ... to compress the output optical pulses from the rare-earth doped fiber amplifier", as defined by independent claim 1. The arrangement of Galvanauskas et al. utilizes Bragg grating structures to perform both pulse "stretching" and "pulse compression". The embodiment of FIG. 1 of Galvanauskas et al. uses a single Bragg grating, reflecting the signal a second time through the Bragg grating to perform compression. The embodiment of FIG. 3 uses a pair of Bragg gratings, one for "stretching" and a separate one for "compressing".

It is considered to be an advantage/improvement of the present invention that the use of "fused" section of single mode fiber as the compression element, as compared to the need to fabricate and use a Bragg grating structure. The ability to fuse a single mode fiber to the fiber amplifier is considered to substantially reduce insertion loss into the

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output element and also prevent reflected signals from being generated and thus directed back into the fiber amplifier. The embodiment of Galvanauskas et al. as illustrated in FIG. 3 requires the use of various beam splitters (6a, 6b) and a reflector (8a) to properly direct the signal through the various elements, where unwanted reflections and insertion loss can occur at each element. There is no teaching in the cited Fermann et al. reference regarding the use of a section of single mode fiber as a pulse compression element.

Based on these differences, applicant asserts that the combination of Galvanauskas et al. and Fermann et al. cannot be found to render obvious the subject matter of independent claim 1, or claims 2-10, 13-15 and 18, which depend therefrom. Applicant thus respectfully requests the Examiner to reconsider this rejection and find the claims to be in condition for allowance.

35 USC § 103(a) Rejection – Claims 16-17

The Examiner next rejected dependent claims 16 and 17 under 35 USC 103(a) as being unpatentable over Galvanauskas et al. (as above), when further considered with US Publication No. 2003/0156606 (Richardson et al.). The Richardson et al. reference was cited by the Examiner as teaching the use of the particular wavelengths cited in claims 16 and 17.

For the reasons stated above, applicant asserts that the combination of Richardson et al. and Galvanauskas et al. cannot be found to render obvious the subject matter of claims 16 and 17. In particular, the cited combination does not disclose the use of a section of single mode fiber as the output pulse compression element. Applicant thus respectfully requests the Examiner to reconsider this rejection and find claims 16 and 17 to be in condition for allowance.

Objection to Claims, Allowable Subject Matter – Claims 11-12

Lastly, the Examiner cited claims 11 and 12 as containing patentable subject matter, but depending from a rejected base claim (independent claim 1). Inasmuch as applicant believes that claim 1 is allowable (as amended) over the cited combination of references, it is presumed that claims 11 and 12 are allowable in their current dependent form.

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Drawing Objection

In the Detailed Action, the Examiner stated that the case had been filed with informal drawings, and asked that formal drawings be submitted when the case is allowed. However, applicant has previously submitted Formal Drawings on May 17, 2004. A copy of the postmarked return postcard indicating the submission of formal drawings is submitted with this response. If additional drawing sets are required, the Examiner is asked to please contact applicant's attorney.

Summary

The present application contains claims 1-18, where independent claim 1 has been amended to clarify the subject matter of the present invention. Applicant believes that the case, in its present form, is now in condition for allowance and respectfully requests an early and favorable response from the Examiner in that regard. If for some reason or other the Examiner does not agree that the case is ready to issue and that an interview or telephone conversation would further the prosecution, the Examiner is invited to contact applicants' attorney at the telephone number listed below.

Respectfully submitted,

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Date: 7/18/05

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